

Image & Video Processing

Assignment 4 - Color and Multi-scale Representations

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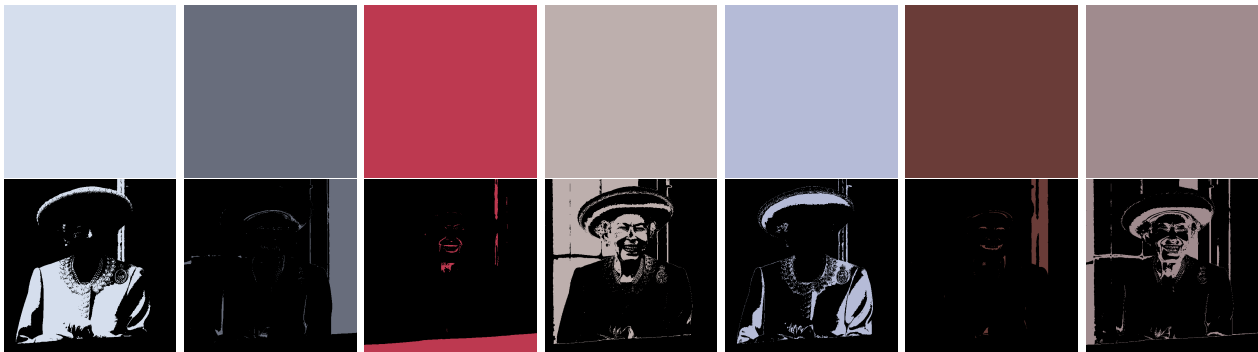
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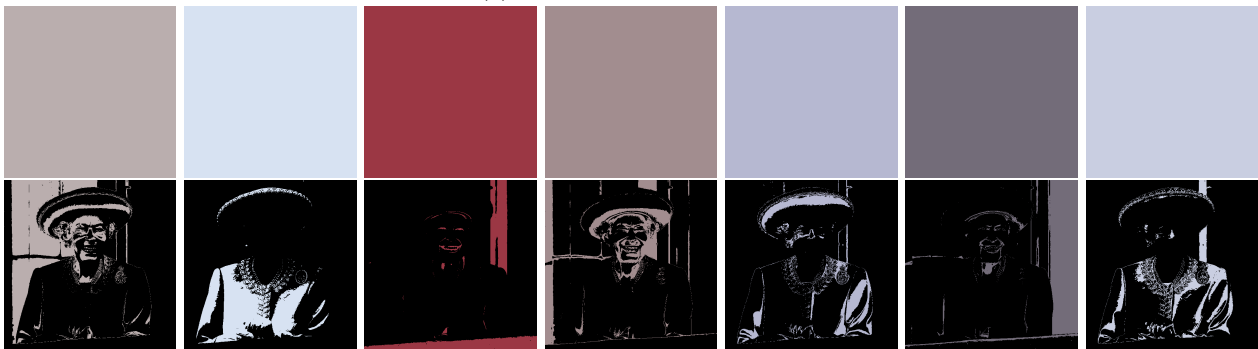
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1 Color Palette Extraction from Images [7 points]

1.1 Linear RGB and sRGB Color Palettes



(a) RGB Palette and Layers



(b) sRGB Palette and Layers



(c) RGB Clustered image

(d) sRGB Clustered image

1.2 CIELab Color Palette

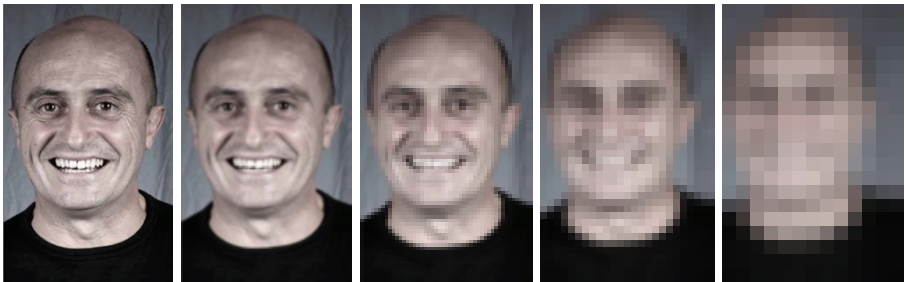
2 Color Quantization and lookup tables (LUTs) [3 points]

3 Gaussian and Laplacian Pyramids [4 points]

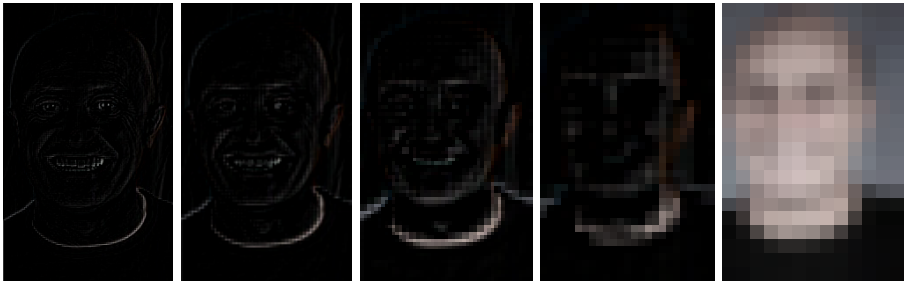
4 Hybrid Images [3 points]

5 Theory: Hybrid Images [3 points]

6 Bonus: Create your own Instagram Filter! [10 points]



(a) Gaussian Pyramid layers



(b) Laplacian Pyramid layers

Figure 2: Image pyramid decomposition of happy.jpg

